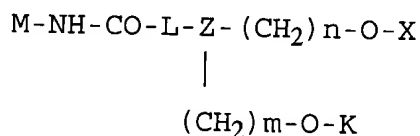


CLAIMS

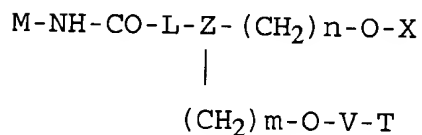
1. A labelling reagent having the structure



in which

- M is a detectable label
- L represents a linker having the structure $\text{-(CH}_2\text{)}_p\text{-}$ or the structure $\text{-(CH}_2\text{)}_p\text{-CO-NH-}$
- Z is either CH or N,
- X is a cleavable protective group
- n, m and p are, independently of one another, natural numbers from 1-15,
- O-K is either a phosphoramidite, or K = -V-T, such that T is a solid phase support material and V is a linking group containing a cleavable bond.

2. A labelled reactive support having the structure



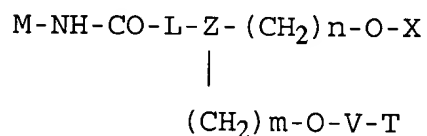
in which

- M is a detectable label
- L represents a linker having the structure $\text{-(CH}_2\text{)}_p\text{-}$ or the structure $\text{-(CH}_2\text{)}_p\text{-CO-NH-}$
- Z is either CH or N,
- X is a cleavable protective group,
- n, m and p are, independently of one another,

natural numbers from 1-15,

- T is a solid phase support material, and
- V is a linking group which contains a cleavable bond.

3. A labelled reactive support having the structure



in which

- M is a detectable label
- X is a cleavable protective group,
- n, m and p are, independently of one another, natural numbers from 1-15,
- T is a solid phase support material, and
- V is a linking group which contains a cleavable bond

wherein L represents a linker having the structure

- $(\text{CH}_2)_p\text{-CO-NH-}$

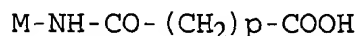
and p is a natural number from 1-15.

4. A support as claimed in claim 2, wherein the support material consists of glass particles having a defined pore size.

A¹ cont

5. A support as claimed in claim 2, wherein the detectable label M is a fluorescent dye, preferably fluorescein.

6. A method of preparing a solid support, said method comprising using a molecule having the structure



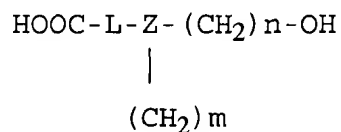
in which p represents a natural number between 1 and 15 and M is a detectable label, to prepare a support as claimed in claims 2-5.

7. A process for the production of a support as claimed in claims 2-5, comprising the following steps:

- a) preparing a trifunctional spacer containing two reactive hydroxyl groups and one reactive amino group
 - b) introducing a protective group on a hydroxyl group
 - c) converting the carboxylic acid group of a molecule as claimed in claim 6 into an activated ester
 - d) coupling the activated ester to the reactive amino group of the trifunctional spacer
 - e) coupling the hydroxyl group of the trifunctional spacer which is still free to the support material.
-

A²

8. A method of preparing a support, said method comprising using a trifunctional spacer having the structure





in which

- Z is either CH or N
- L is a linker having the structure $-(\text{CH}_2)_p-$ or the structure $-(\text{CH}_2)_p\text{-CO-NH-}$ and
- m, n and p each, independently of one another, a natural number between 1 and 15,

to prepare a support as claimed in claims 2-5.

9. A process for the production of a support as claimed in claims 2-5, comprising the following steps:

- a) preparing a trifunctional spacer using the method of claim 8
- b) introducing the protective group on a hydroxyl group
- c) converting the carboxylic acid group of the trifunctional spacer into an activated ester
- d) coupling a detectable molecule containing a free amino group by reacting the active ester with the amino group
- e) coupling the hydroxyl group that is still free to the support material.

10. A method to synthesize labelled nucleic acids comprising using a support as claimed in claims 2-5 to synthesize 3'-labelled nucleic acids.

11. A 3'-labelled nucleic acid molecule prepared by a method comprising using a support as claimed in claims 2-5.

A2
cont.

12. A compound comprising a nucleic acid molecule having a substituent with the structure



at the 3'-position of the 3'-terminal ribose, in which M is a detectable label such as a fluorescent dye.

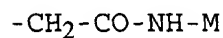
13. A labelling reagent as claimed in claim 1, wherein O-K is a phosphoramidite.

14. A labelling reagent as claimed in claim 13, wherein the detectable label M is a fluorescent dye, preferably fluorescein.

15. A method of synthesizing labelled nucleic acids comprising using a labelling reagent as claimed in claims 13-14 to synthesize labelled nucleic acids.

16. A labelled nucleic acid molecule prepared by a method comprising using a labelling reagent as claimed in claims 13-14.

17. A nucleic acid molecule as claimed in claim 16 having a substituent with the structure



in which M is a detectable label such as a fluorescent dye.
